

ART. II.—*New or Little-known Victorian Fossils in the National Museum.*

PART XXIV.—ON A FOSSIL TORTOISE IN IRONSTONE FROM CARAPOOK, NEAR CASTERTON.

By FREDERICK CHAPMAN, A.L.S.
(Palæontologist, National Museum, Melbourne.)

(With Plate I).

[Read 8th May, 1919].

Note on the Matrix.

Bog iron-ore, known mineralogically as a form of Limonite ($2\text{Fe}_2\text{O}_3 + 3\text{H}_2\text{O}$), is a common preservative of fossil plants and animals, in which their remains are usually found as casts and impressions. In Victoria we have numerous instances of such occurrences of beds of ironstone; as for example, the deposit on the Parwan Creek, and other exposures near Bacchus Marsh, which contain leaves of Laurel, Cinnamon and Beech.

Of terrestrial or freshwater (lacustrine) origin, these bog iron-ores contain the remains either of the organisms which were living in the swamps and lakes, as the ostracoda and shells; or remains of animals as bones and feathers, which were washed into the deposit off the land.

In the case of the Swedish lake iron-ores, the higher bacteria have played a prominent part in separating the iron oxide from the water, and such may have been the case with the beds of ironstone near Casterton in which the above fossil tortoise was found. The iron was in all probability derived from the vast outpourings of lava during late Tertiary times in Victoria, being dissolved out by meteoric waters and re-deposited in pans on the bottoms of swamps and lakes.

Description of Specimen.

The practically unique fossil now under consideration was found in a bed of ironstone at Carapook, north-east of Casterton. It represents a replacement in limonite of the greater part of the body cavity of a tortoise. On the dorsal surface the vertebral

column is well-marked by a deep, interrupted groove. The sutures of the costal plates are faintly visible. The impressions of the bones of the pelvic girdle are also seen. On the ventral side impressions of the bones of the plastron may be made out, and also those of the epidermal plates; of the latter the most strongly marked are the grooves between the pectoral and abdominal shields.

This fossil cast is referable to the genus *Emydura*, Bonaparte,¹ to which the Murray Mud-tortoise belongs. From all appearances the fossil may be referred, with some reservation, to the same species, *Emydura macquariae*, Gray sp.²

The length of the fossil specimen when complete was about 28 cm. as against 27 cm. of a full-grown living specimen.³ Breadth, about 15 cm. A living example from Wahgunyah, mentioned by McCoy, shows almost identical proportions. This fossil is slightly broader in proportion, both across the carapace and plastron, than the living specimens, but this difference seems to be due to compression.

Observations.—The Murray Mud-tortoise is common in the River Murray and its tributaries and branches, but is not found in Victoria in rivers flowing to the south. This curious point in its local distribution may indicate the once northern trend of the rivers in the Casterton district, which now join the Glenelg.

Anent the discovery of the specimen, the question arises whether this ironstone deposit bears any relationship to that occurring at Redruth, which yielded *Eucalyptus* and *Banksia* leaves, and a bird's feather.⁴ Carapook is in the same district as Redruth, and

1. Arch. f. Naturgeschichte, 1838, Vol. I., p. 140.

2. *Hydraspis macquarii*, Gray, 1831, Syd. Rept., p. 40.

Platemys macquariae, Gray sp., Dumeril and Bibron, Erp. Gen., Vol. II., p. 438.

Hydraspis victoriarum, Gray 1842, Zool. Misc., p. 55.

Chelymys macquaria (pars), Gray, 1844, Cat. Tort., p. 42.

Euchelymys sulcifera, Gray, 1871, Ann. Mag. Nat. Hist. ser. 4, Vol. VIII., p. 118.

Euchelymys sulcifera, Gray, 1872, Proc. Zool. Soc. Lond., p. 508.

Chelymys victoriarum (pars), Gray, Proc. Zool. Soc. Lond., p. 506, pl. XXVII.

Chelymys macquaria, Cuvier sp. McCoy, 1884, Prod. Zool. Vict. pp. 11-14, pl. LXXXII. and LXXXIII.

Emydura macquariae, Gray sp. Boulenger, 1889, Cat. Chelonians, Rhynchocephalians and Crocodiles in the Brit. Mus., p. 230, Fig. 63.

Emydura macquariae, Lydekker, 1889, Cat. Foss. Rept. and Amphibia. Brit. Mus., p. 169.

3. Prod. Zool. Vict., Vol. I., 1884, p. 12.

4. See Proc. Roy. Soc. Vict., Vol. XXIII. (N.S.), pt. I., 1910, pp. 23-26, pls. IV., V.

1



2

